AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Clean Water Act as amended (33 U.S.C. §§1251 et eq.; the "CWA"), and the Massachusetts Clean Waters Act, as amended (M.G.L. Chap. 21, §§26-53),

Town of Spencer
Sewer Commission

is authorized to discharge from a facility located at

Spencer Wastewater Treatment Plant
Route 9
Spencer, MA

to receiving waters named **Cranberry Brook**

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective 60 days after signature.

This permit and the authorization to discharge expire at midnight three years from effective date.

This permit supersedes the permit issued on January 12, 1993, modified on July 14, 1994 and expired on February 12, 1998.

This permit consists of 12 pages in Part I, including effluent limitations, monitoring requirements; Attachment A: Freshwater Chronic Toxicity Test Procedures and Protocols, Sludge Compliance Guide; and 35 pages in Part II, including General Conditions and Definitions.

Signed this 4th day of February, 2003

/Signature on File/

Linda M. Murphy, Director
Office of Ecosystem Protection
Environmental Protection Agency
Boston, MA

Director
Division of Watershed Management
Department of Environmental Protection
Commonwealth of Massachusetts
Boston, MA

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning with the effective date and lasting through expiration, the permittee is authorized to discharge treated effluent from outfall number 001. Such discharge shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Units	Discharge Limitation			Monitoring Requirement	
		Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Flow[1]	MGD	1.08	----	Report	Continuous[1]	Recorder
BOD *(May 1- October 31*)	mg/l	5.6	7.5	Report	1/Week[2]	24-Hour
	lbs/day	50	68	Report		Composite[3]
(November - April 30)	mg/l	30	45	Report		
	lbs/day	270	405	Report		
TSS *(May 1- October 31)*	mg/l	5.6	7.5	Report	1/Week[2]	24-Hour
	lbs/day	50	68	Report		Composite[3]
(November 1- April 30)	mg/l	30	45	Report		
	lbs/day	270	405	Report		
pH	S.U.	(See Condition I.A.1.a on page 5)			1/Day	Grab
Fecal Coliform Bacteria[4]	cfu/100 ml	200	----	400	1/Week	Grab
Total Residual Chlorine[5]	ug/l	12	----	21	1/Day	Grab

Effluent Characteristic	Units	Discharge Limitation			Monitoring Requirement	
		Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Ammonia-Nitrogen						
(May 1- October 31)	mg/l	0.56	0.84	Report	1/week	24-Hour
	lbs/day	5.0	7.5	Report		Composite[3]
(December 1- April 30)	mg/l	Report	Report	Report		
	lbs/day	Report	Report	Report		
(November 1-30)	mg/l	8.5	Report	Report		
	lbs/day	76	Report	Report		
TKN, Nitrite & Nitrate Nitrogen	mg/l	Report	-----	-----	1/month	24-Hour
	lbs/day	Report				Composite[3]
Total Phosphorus						
(May 1-October 31)	mg/l	0.3[6]	Report	Report		24-Hour
	lbs/day	2.7[6]	Report	Report		Composite[3]
(November 1- April 30)	mg/l	0.75	1.0	Report	1/week	
	lbs/day	6.8	9.0	Report		
Copper[7]	ug/l	4	-----	5	1/Month	24-Hour
						Composite[3]
LC_{50}[8, 9]	%	-----	-----	100%	4/year	24-Hour Composite[3]
Chronic NOEC [8,10]	%	-----	-----	89%	4/Year	24-Hour Composite[3]
Dissolved Oxygen *(May 1- October 31)*	mg/l	>6.0	>6.0	-----	1/week	Grab

Footnotes:

1. For flow, report maximum and minimum daily rates and total flow for each operating date. The 1.08 MGD flow limit is a running annual arithmetic average, which shall be reported each month, and calculated using the monthly average flow for the reporting month and the monthly average flows for the previous eleven months.

2. Sampling required for influent and effluent.

3. A 24-hour composite sample will consist of at least twenty-four (24) grab samples taken during one operational daily cycle (e.g. 0700 Monday- 0700 Tuesday).

4. Fecal coliform monitoring conducted and limit will be in effect for the period *May 1- October 31*. This is a state certification requirement. The monthly average limit is expressed as a geometric mean. The permittee is not required to disinfect its discharge from November 1 through April 30.

5. The minimum level (ML) for total residual chlorine is defined at 50 ug/l. This value is the minimum level for chlorine using EPA approved methods found in Standard Methods for the Examination of Water and Wastewater, 20th edition, Method 4500 Cl-E and G, or US EPA Manual of Methods for Chemical Analysis of Water and Wastewater, Method 330.5. One of these methods must be used to determine total

residual chlorine. Sample results of 50 ug/l or less shall be reported as zero on the discharge monitoring report. Compliance/non compliance will be determined based on the ML.

If an ultraviolet disinfection facility is constructed, the permittee shall discontinue chlorination of its effluent upon achieving operational level of the ultraviolet disinfection system, and will no longer be required to sample or analyze the effluent for total residual chlorine, unless it is adding chlorine for purposes other than disinfection.

6. This is an interim limit. The final limit is a monthly average concentration of 0.2 mg/l and a monthly average mass of 1.8 lbs/day, which are established as "highest and best practical treatment " pursuant to the State's water quality standards at 314CMR 4.04(5). A compliance schedule for achieving the final limit is established in Part I.E. of this permit.

   The interim limit shall be in effect for the term of the permit, unless the limit is modified using appropriate permit modification procedures, or if the optimization study to be completed in accordance with the compliance schedule in Part I.E.1 of this permit demonstrates that the final limit is attainable by the existing facility. If the optimization study report concludes that the final limit is attainable by the existing facility, the final limit will become effective on the date specified in the compliance schedule. The interim or final permit limit may be modified, subject to public notice and comment, based upon revisions to the water quality standards, compliance with the requirements of a Total Maximum Daily Load or upon a demonstration that an alternative permit limit will achieve water quality standards and the goals of the Clean Water Act.

   Consistent with Section B.1. of Part II (General Conditions) of the permit, the permittee shall properly operate and maintain the existing phosphorus removal facilities at the treatment plant to obtain the lowest effluent phosphorus concentration that can be reasonably achieved.

7. The minimum level (ML) for copper is defined as 5.0 ug/l. This value is the minimum level for copper using the furnace atomic absorption analytical method. For effluent limitations less than 5 ug/l, compliance/non-compliance will be determined based on the ML. Sample results of 5 ug/l or less shall be reported as zero on the discharge monitoring report. The permit limit becomes effective one year after permit effective date.

8. The permittee shall conduct acute and modified chronic toxicity test four times per year. The permittee shall test the daphnid specie Ceriodaphnia dubia as the test species. Lab water is approved for use a dilution water. In addition, the permittee is required to collect a sample of the receiving water at a point upstream of the discharge to use as an additional control. The test samples shall be *collected in second week of February, May, August, and November. Results are to be submitted by the 30th day of the month after the*

sample, i.e. March, June, September, and December. See Permit Attachment A, Toxicity Test Procedure and Protocol.

9. The LC_{50} is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 100% limits means that a sample of 100 % effluent (no dilution) shall cause no more that a 50% mortality rate.

10. The "89% or greater" is defined as a sample which is composed of 89% (or greater) effluent, the remainder being dilution water. This is a maximum daily limit derived as a percentage of the inverse of the dilution factor.

PART I.A.1 (continued)

a. The pH of the effluent shall not be less than 6.5 S.U., nor greater than 8.3 S.U. at any time, unless these values are exceeded due to natural causes or as a result of the approved treatment processes.

b. The discharge shall not cause objectionable discoloration of the receiving waters.

c. The effluent shall contain neither a visible oil sheen, or foam, nor floating solids at any time.

d. The permittee's treatment facility shall maintain a minimum of 85 percent removal of both total suspended solids and biochemical oxygen demand. The percent removal shall be based on monthly average values.

e. When the effluent discharged for a period of 90 consecutive days exceeds 80 percent of design flow, the permittee shall submit to the permitting authorities a projection of loadings up to the time when the design capacity of the treatment facility will be reached, and a program for maintaining satisfactory treatment levels consistent with approved water quality management plans.

2. All POTWs must provide adequate notice to the Director of the following:

   a. Any new introduction of pollutants into that POTW from an indirect discharger in a primary industry category discharging process water; and/or

   b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.

   c. For purposes of this paragraph, adequate notice shall included information on:

(1) The quantity and quality of effluent introduced into the POTW; and

(2) Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

3. Prohibitions Concerning Interference and Pass Through:

a. Pollutants introduced into POTWs by a non-domestic source shall not pass through the POTW or interfere with the operation or performance of the works.

b. If, within 30 days after notice of an interference or pass through violation has been sent by EPA to the POTW, and to persons or groups who have requested such notice, the POTW fails to commence appropriate enforcement action to correct the violation, EPA may take appropriate enforcement action.

4. Toxics Control

a. The permittee shall not discharge any pollutant or combinations of pollutants in toxic amounts.

b. Any toxic components of the effluent shall not result in any demonstrable harm to aquatic life or violate any state or federal water quality standard which has been or may be promulgated. Upon promulgation of any such standard, this permit may be revised or amended in accordance with such standards.

c. The permittee shall minimize the use of chlorine while maintaining adequate bacterial control.

5. Numerical Effluent Limitations for Toxicants

EPA or DEP may use the results of the toxicity tests and chemical analyses conducted pursuant to this permit, as well as national water quality criteria developed pursuant to Section 304(a)(1) of the Clean Water Act (CWA), state water quality criteria, and any other appropriate information or data, to develop numerical effluent limitations for any pollutants, including by not limited to those pollutants listed in Appendix D of 40 CFR Part 122.

B. UNAUTHORIZED DISCHARGES

The permittee is authorized to discharge to surface water only in accordance with the terms and conditions of this permit and only from the outfall listed in Part I.A.1 of this permit. Discharge of wastewater from any other surface water point source is not authorized by this permit and shall be reported in accordance with Section D.1.e.(1) of the General Requirements of this permit (Twenty-four hour reporting).

C. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

Operation and maintenance of the sewer system shall be in compliance with the General Requirements of Part II and the following terms and conditions:

1. Maintenance Staff

   The permittee shall provide adequate staff to carry out the operation, maintenance, repair and testing functions required to ensure compliance with the terms and conditions of this permit.

2. Infiltration/Inflow

   The permittee shall develop and implement a plan to control infiltration and inflow (I/I) to the separate sewer system. The plan shall be submitted to EPA and MA DEP *within six months of the effective date of this permit* (see page 1 of this permit for the effective date) and shall describe the permittee's program for preventing infiltration/inflow related effluent limit violations, and all unauthorized discharges of wastewater, including overflows and by-passes due to excessive infiltration/inflow.

   The plan shall include:

   - An ongoing program to identify and remove sources of infiltration and inflow. The program shall include the necessary funding level and the source(s) of funding.

   - An inflow identification and control program that focuses on the disconnection and redirection of illegal sump pumps and roof down spouts. Priority should be given to removal of public and private inflow sources that are upstream from, and potentially contribute to, known areas of sewer system backups and/or overflows.

   - Identification and prioritization of areas that will provide increased aquifer recharge as the result of reduction/elimination of infiltration and inflow to the system.

   - An educational public outreach program for all aspects of I/I control, particularly private inflow.

   Reporting Requirements:

   A summary report of all actions taken to minimize I/I during the previous calendar year shall be submitted to EPA and the MA DEP *annually, by the anniversary date of the effective date of this permit.* The summary report shall, at a minimum, include:

- A map and a description of inspection and maintenance activities conducted and corrective actions taken during the previous year.

- Expenditures for any infiltration/inflow related maintenance activities and corrective actions taken during the previous year.

- A map with areas identified for I/I-related investigation/action in the coming year.

- A calculation of the annual average I/I, the maximum month I/I for the reporting year.

- A report of any infiltration/inflow related corrective actions taken as a result of unauthorized discharges reported pursuant to 314 CMR 3.19(20) and reported pursuant to the Unauthorized Discharges section of this permit.

3. Alternate Power Source

In order to maintain compliance with the terms and conditions of this permit, the permittee shall continue to provide an alternative power source with which to sufficiently operate its treatment works (as defined at 40 CFR § 122.2).

4. Chlorination System Report

Within one year of the effective date of the permit, the permittee will submit a report documenting the effectiveness of the chlorination and dechlorination systems. The report will specifically address how flow variability and chlorine demand variability affect compliance with the TRC and fecal coliform limits at all times. Sampling data shall be provided to support conclusions on how hourly and daily flow and chlorine demand variability affects permit compliance. The report will include a description of the chlorination and dechlorination systems and methods for dosage control. The report will identify all changes necessary to ensure compliance with the TRC and fecal coliform limits at all times, including equipment modifications and upgrades, operational procedures (including calibration procedures and alarm/response procedures), and sampling protocols. The report will include a schedule for implementing all of the necessary changes. An annual report shall be *submitted on November 30 of each year* summarizing all exceedances of the TRC and fecal coliform effluent limits during the previous twelve months, the estimated or measured fecal coliform and chlorine discharge levels during the exceedance, and measures taken to fix the problem and to prevent future occurrences.

If, within one year of the effective date of the permit, the permittee notifies EPA that it will complete construction of a disinfection system which does not use chlorine within

two years of the effective date of the permit, the requirement for the chlorination system report shall be waived.

D. SLUDGE CONDITIONS

1. The permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices and with the CWA Section 405(d) technical standards.The permittee shall comply with the more stringent of either state or federal requirements.

2. The technical standards (Part 503 regulations) apply to facilities which perform one or more of the following use or disposal practices:

   a. Land application - the use of sewage sludge to condition or fertilize the soil
   b. Surface disposal - the placement of sewage sludge in a sludge-only landfill
   c. Placement of sludge in a municipal solids waste landfill.

3. These conditions do not apply to facilities which transport sewage sludge to another facility for use or disposal or which do not use or dispose of sewage sludge (e.g. lagoons - reed beds); or material described in 40 CFR 503.6 (Exclusions).

4. The permittee shall use and comply with the attached guidance document to determine appropriate conditions. Appropriate conditions contain the following elements:

   - General requirements
   - Pollutant limitations
   - Operational standards (pathogen reduction requirements and vector attraction reduction requirements)
   - Management practices
   - Record keeping
   - Monitoring
   - Reporting

   Depending upon the quality of material produced by a facility, all conditions may not apply to the facility.

6. The permittee shall monitor the pollutant concentrations, pathogen reduction and vector attractions reduction at the following frequency. This frequency is based upon the volume of sewage sludge generated at the facility in dry metric tons per year.

Sludge Volume (dry metric tons/year)	Monitoring Frequency

less than 290	1/year
290 to less than 1500	1/quarter
1500 to less than 15,000	6/year
15,000+	1/month

7. The permittee shall sample the sewage sludge using the procedures detailed in 40 CFR Section 503.8.

8. The permittee shall *submit an annual report containing the information specified in the guidance by February 19*. Reports shall be submitted to the address contained in the reporting section of the permit. Sludge monitoring is not required by the permittee when the permittee is not responsible for the ultimate sludge disposal. The permittee must be assured that any third party contractor is in compliance with appropriate regulatory requirements. In such case, the permittee is required only to submit an *annual report by February 19* containing the following information:

   - Name and address of contractor responsible for sludge disposal
   - Quantity of sludge in dry metric tons removed from the facility by the sludge contractor

E. Compliance Schedule

1. Optimization Study

   Upon the effective date of the permit, the permittee shall begin to develop a plan for determining the lowest effluent phosphorus concentration achievable by the existing facility. The plan shall include, at a minimum, the use of multiple dosing points for chemical addition, various dosage rates, increased monitoring of influent and effluent phosphorus concentrations, and a plan for minimizing influent phosphorus loading to the treatment facility. The permittee shall submit the plan *within six (6) months of the effective date of the permit and implement the plan within three (3) months of its submittal, or by May 1, 2003, whichever is later.* The study shall continue for one full season (i.e the study shall be performed during the months of May, June July, August, September, and October).

   A final report documenting the results of the study shall be *submitted within three (3) months of completion of the study.* This final report shall include, at a minimum, the chemical dosage rates used, a summary of the influent and effluent phosphorus concentrations achieved, and an evaluation of whether the optimization of phosphorus removal at the existing facility is sufficient to consistently achieve the final monthly

average phosphorus limit of 0.2 mg/l. If the final report concludes that the final limit of 0.2 mg/l can be achieved by optimizing removal at the existing plant and minimizing influent loading, the final permit limit of 0.2 mg/l or less shall become effective 30 days after submitting the report.

2. Feasibility Study

If the permittee's optimization study report concludes that the existing facility cannot consistently achieve the final effluent limit of 0.2 mg/l by optimizing removal and minimizing influent loading, the permittee shall, *within six (6) months of submitting the optimization study report,* submit a feasibility study which evaluates options for achieving the final limit, selects an option for achieving the limit, and contains a schedule for implementing the selected option. EPA and MADEP would then expect to initiate a permit modification to incorporate a schedule of compliance for achieving the final limit.

F. MONITORING AND REPORTING

1. Reporting

Monitoring results obtained during the previous month shall be summarized for each month and reported on separate Discharge Monitoring Report Forms(s) *postmarked no later than the 15th day of the month following the effective date of the permit*.

Signed and dated originals of these, and all other reports required herein, shall be submitted to the Director and the State at the following addresses:

Environmental Protection Agency
Water Technical Unit (SEW)
P.O. Box 8127
Boston, Massachusetts 02114

The State agency is:

Massachusetts Department of Environmental Protection
Bureau of Resource Protection
Central Regional Office
627 Main Street
Worcester, MA 01608

Signed and dated Discharge Monitoring Report forms and toxicity test reports required by this permit shall also be submitted to the State at:

Massachusetts Department of Environmental Protection
Division of Watershed Management
Surface Water Discharge Permit Program

627 Main Street, 2nd Floor
Worcester, MA 01608

G. STATE PERMIT CONDITIONS

1. This discharge permit is issued jointly by the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MA DEP) under federal and state law, respectively. As such, all the terms and conditions of this permit are hereby incorporated into and constitute a discharge permit issued by the MA DEP pursuant to M.G.L. Chap. 21, §43.

2. Each agency shall have the independent right to enforce the terms and conditions of this permit. Any modification, suspension, or revocation of this permit shall be effective only with respect to the agency taking such action, and shall not affect the validity or status of this permit as issued by the other agency, unless and until each agency has concurred in writing with such modification, suspension, or revocation. In the event any portion of this permit is declared invalid, illegal, or otherwise issued in violation of state law such permit shall remain in full force and effect under federal law as an NPDES permit issued by the U.S. Environmental Protection Agency. In the event this permit is declared invalid, illegal or otherwise issued in violation of federal law, this permit shall remain in full force and effect under state law as a permit issued by the Commonwealth of Massachusetts.